

Role Of Ileostomy In The Management Of Typhoid Perforation Of Small Bowel In Children

S U REHMAN S H DAR M AHMED M N RAZA
Department of Paediatric Surgery Mayo Hospital, Lahore.
Correspondance to: Prof. Muhammad Naseem Raza.

A prospective study of eighty one cases of perforated typhoid enteritis is presented. Sixty four (79.75%) patients presented with single perforation. In 47 (58.02%) patients perforation was less than one centimetre in diameter and simple closure of perforation done. Whereas 17 (20.98%) patients had perforation more than one centimetre in diameter and wedge resection was done in these cases. Seventeen (20.98%) patients presented with multiple perforations and gross peritonitis. Double barrel ileostomy was done in these cases. Postoperative recovery was satisfactory with no mortality and minimal complications.

Key Words: perforated typhoid enteritis, ileostomy.

Typhoid fever is endemic in Pakistan¹, as all the factors which are needed for the spread of this disease are frequently present i.e., overcrowding, illiteracy, poverty, poor sanitation and inadequate facilities for safe drinking water. Once an illness of the hot weather, it is now endemic in Pakistan throughout the year². The incidence of typhoid fever has not declined in this country in the last few decades³. The highest risk of infection is present in pre-school and school going children and individuals in various institutions / hospitals and training centres⁴. The most frequent complication of typhoid fever requiring surgical treatment is intestinal perforation⁵. The incidence of typhoid perforation is still high in our country. More than 50% of the reported small bowel perforations are attributable to the typhoid fever^{6,7}. The ideal treatment of typhoid perforation is still a hotly discussed issue. There are various surgical options which have their own merits and demerits. Ileostomy is a life saving procedure particularly in those cases where there is gross peritonitis and multiple perforations.

Materials and methods.

The study was carried out at the Department of Paediatric Surgery, K.E.M.C., Mayo Hospital, Lahore from January 1994 to December 1996. A total of 81 cases of typhoid perforation were included in the study. A detailed performa was filled up for each patient. Complete clinical examination was done. Each patient was subjected to a set of investigations. Diagnosis of perforated typhoid enteritis was made on the basis of history, clinical examination, laboratory investigations, operative findings and histological picture of biopsy taken from the margins of perforation.

Before operation, proper resuscitation of the patient was carried out. Nasogastric decompression done. Strict input and output record was maintained. Correction of dehydration and electrolyte imbalance was done. Chloramphenicol, Gentamycin and Metronidazole were used in each patient to cover Gram positive and Gram

negative bacteria, anaerobes and salmonella. All patients were divided into three groups on the basis of operative findings.

Group	Procedure	Criteria
A	Ileostomy	multiple perforations, gross peritoneal soilage, & Diffusely inflamed ileum
B	Wedge Resection	Single wide perforation more than one cm. in diameter & Moderate peritoneal soilage
C	Simple Closure	Single perforation & Minimal peritoneal soilage.

Post operative care was standard and comparable in all groups. Daily progress of patient was recorded. A meticulous record of complications was maintained.

Results

In this prospective study of 81 patients, there was a significant preponderance for males. The sex distribution is given in table 1 and age distribution is given in table 2. Enteric fever is more common in the rural areas. These are areas where socio-economic conditions are poor and safe water supply is not available. Medical care is also not satisfactory. Fifty five (67.90%) cases presented from the rural areas and 26 cases (32.10%) were from the urban areas. Rural to urban area ratio being 2.11:1.00. Geographical distribution is shown in table 3.

Table 1- Sex distribution.

Sex	n=
Male	57 (70.37%)
Female	24 (29.63%)

Male: Female = 2.37 : 1.0

Table 2- Age Distribution.

Age(Years)	n=
1-3	4(4.93%)
4-6	10 (12.37%)
7-9	22 (27.28%)
10-12	45 (55.55%)

Table 3- Geographical distribution.

Area	n=
Rural	55(67.90%)
Urban	26 (32.10%)

Rural: Urban = 2.11:1.00

Seventeen patients (20.98%) presented with multiple perforations and gross peritonitis. Two perforations were

found in 7 (8.64%) patients whereas 10 (12.34%) patients presented with more than two perforations. Ileostomy was performed in this group of patients. The portion of distal ileum with multiple perforations was resected and double barrel ileostomy was done. All patients were followed up till the reversal of ileostomy stoma, for complications related to ileostomy. The most troublesome complication was skin excoriation 7/17(41.17%). Prolapse or retraction of stoma was not seen in any case. Forty seven (58.02%) patients presented with single perforation, less than one centimetre of diameter and simple repair was done. Seventeen patients (20.98%) presented with single perforation more than one centimetre of diameter and wedge resection was done in these cases. Comparison of complications is shown in table 6. Hospital stay is shown in table 7. In this prospective study of eighty one patients, all the patients survived.

Table 4- Incidence of perforations.

Perforation	n=
Single	64 (79.75%)
Two	7 (8.64%)
More than two	10 (12.34%)

Table 5-Operative procedures.

Procedure	n=
Ileostomy	17 (20.98%)
Wedge resection	17 (20.98%)
Simple closure	47 (58.02%)

Table 6- Complications

Complications	Ileostomy	Wedge resection	Simple Closure
Wound infection	13 (76.47%)	11 (64.70%)	30 (63.82%)
Chest infection	12 (70.58%)	8 (47.05%)	20 (42.55%)
Wound dehiscence	3 (17.64%)	3 (17.64%)	8 (17.02%)
Incisional hernia	4 (23.52%)	2 (11.76%)	5 (10.64%)
Burst abdomen	3 (17.64%)	-	5 (10.64%)
Faecal fistula	-	2 (11.76%)	3 (6.38%)
Intraperitoneal abscess	2 (11.76%)	-	2 (4.25%)
Adhesion obstruction	-	-	3 (6.38%)
Skin excoriation	7 (41.17%)	-	-

Table 7- Hospital Stay.

Group	Average Stay(Days)
A- Ileostomy	20
B- Wedge Resection	13
C- Simple Closure	15

Discussion

Ileal perforation remains the most dreaded complication of typhoid perforation, carrying a high mortality and morbidity^{8,9}. An aggressive pre-operative management, followed by an adequate operative procedure is attended by a better prognosis. The study was primarily conducted to point out that selection of appropriate surgical procedure is very important to reduce the morbidity and mortality.

Ileal resection and end ileostomy was done in seventeen patients. There was gross peritoneal contamination and multiple ileal perforations in this group of patients. The incidence of postoperative

complications was high in this group but all patients survived, inspite of poor general condition. A series of 42 patients with typhoid perforation was presented by Singh et al (1991). Simple closure with proximal ileostomy was found to be the best procedure with regard to morbidity and mortality¹⁰. Rashid and Baber (1993) presented a series of 80 cases with typhoid perforation. Simple closure was done in patients who presented early with single perforation. Right hemicolectomy or ileal resection with end to end anastomosis done in patients who presented late with multiple perforations. Eight patients in this study needed reexploration. Ileostomy was done in five patients and all survived¹¹. Khan et al (1996) presented a series of twenty cases with typhoid perforation. All the cases included in this study had more than one perforation with highly inflamed gut and presented late with septic shock. They were treated with primary closure of perforations and proximal loop ileostomy. Postoperative recovery was satisfactory with no mortality¹². Some authors have recommended a temporary¹³ or permanent end to side¹⁴ or side to side ileotransverse anastomosis^{8,15}. But it too entails undertaking a second procedure for separation of the bypass and restoration of the original continuity, as in a permanent bypass ileotransverse anastomosis a blind loop is formed with its own late complications. Option of ileostomy in typhoid perforation is exercised to varying degree in different series. From procedure of choice in some^{12,16,17}, to almost sparingly as a last option in other series¹⁸.

The overall mortality is falling in most of the centres with the use of more appropriate surgical management. Although bothersome, ileostomy is a life saving procedure in complicated cases.

References

- Hanan A: Typhoid In Pakistan- A decade of experience. Abstracts from proceedings of National Symposium on tropical and infectious diseases. Sept.1995:16.
- Usman J,Karamat K.A, Butt T: Alarming state of emerging resistance in salmonella typhi to conventional anti typhoid drugs in the Kharian region. JCPSP,1996;6(1):30-32.
- Gandapur AJ,Khan FUR, Zeb A, Khan FM, Imran M: Study of 100 patients with enteric fever in children at Peshawar. Pak. Pediar. J.1993;17:19-25.
- Smego RA Jr, Bhutta ZA: Multiple drug resistance. J Pak Med Assoc; 1987; 37:212-215.
- Kizilcan F, Cahit F, Buyukpmuku N, Hiesonmez A: Complications of typhoid fever requiring laparotomy during childhood. J Paedia. Surg 1993; 28:1490-1493.
- Rashid M, Gardezi SJR, Mashadi SA: Wedge resection and anastomosis versus tube ileostomy for typhoid perforation. Pak J Surg.1993;9:144-147.
- Javeed K, Khan AFA: Experience of spontaneous small bowel perforations at Mayo Hospital, Lahore. Pak. J. Surg. 1996; 12:67-73.
- Iqbal M, Rasool I, Shaikat., Rehman HU., Tabriz S: Surgical treatment of typhoid ileal perforations - choice of operation. JPMA 1988; 38: 316-319.
- Dickson JAS., Cole GJ: Perforation of the terminal ileum. Brit. J. Surg 1964;51:893-897.

10. Singh KP., Singh K., Kohli JS: The choice of surgical procedure in typhoid perforations. Experience of 42 cases. J Ind. Med. Assoc. 1991;89(9):255-256.
11. Rashid A. Baber AM: Typhoid ileal perforation, results of surgery in 80 cases. Specialist 1997;10:31-34.
12. Khan MA., Ahmed G., Iqbal N. Role of ileostomy in typhoid perforation. J.Surg 1996;11 & 12:33-34.
13. Lizarralde EA: Typhoid perforation of the ileum in children. J. Paediatr Surg. 1981; 16:1012-1016.
14. Maloney CT: Surgical treatment of typhoid perforation of ileum. NY State J Med: 1971;71:663-667.
15. Kala RP., Asopa HS., Mathur SK., Atri SP: Resection and ileocolostomy for enteric perforation of the terminal ileum. Ind. J. Surg., 1978; 40: 674-679.
16. Khalid K., Durrani KM: Typhoid bowel perforation. P J Surg., 1996; Vol 11: 136-139.
17. Askari SA., Shah TA: Management of typhoid perforation, role of proximal enterocolostomy. P J Surg., 1990; 9: 101-105.
18. Akhter S., Ali I A., Khan AFA., Choudhary AM: Experience of ileostomy in general surgical practice. PJ Surg., 1996.. 12: 71-73.